The MAC Flyer

SEPTEMBER 1980

September Song . . . page 8

The MAC Flyer

MILITARY AIRLIFT COMMAND

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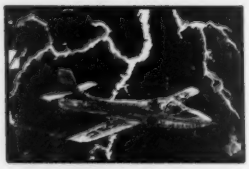

page 4

page 18

page 25

Flyer Forum 3
Pride Goeth Before 4
Mid-Year Accident Statistics 7
September Song 8
Flying Circus 11
Your Job or Your Life 13
Airlift Legacy 16
Mishap with a Moral 18
ERO—Extra Risk Operation 20
Flyers Anonymous 22
Deja Vu: Lajes AB 24
C.R. Terror 25
Quick Stoppers 28

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SHOULD READ VOLUME 27, ISSUE 9

FLYER FORUM

One of the Boys

by CMSgt John K. Wright
Chief Flight Engineer
463 TAW, Dyess AFB, Texas

Editor's Note: The following commentary on leadership was sent to TMF *by Colonel Richard L.W. Henry, Vice Commander of the 463 TAW at Dyess. It originally appeared in the Dyess* Peacemaker. *Colonel Henry's contention that Chief Wright's thoughts have "significance beyond the 463 TAW" seems valid, so here is the article presented verbatim.*

Recently I was privileged to serve as an interviewee for the people attending the "Human Communications" course here at Dyess. One of the interviewers asked me what I felt was the largest problem in the aircrew force today. This question and my reply is something I feel is worth sharing, since it crosses all lines of supervision.

Today the young aircraft commander's inability or unwillingness to exercise the "commander" portion of his title has contributed to a breakdown in discipline of the aircrew force.

The desire to be a friend, one of the "good old boys," is prevalent in all of us. This is evident in the use of first names instead of crew position or title, not only in the airplane but within the squadron as well.

It is easy to forget, during the routine of daily flying, that piloting the airplane is only a part of your job. It is just as easy for those people with you to forget that "Joe" is in actuality their commander. This easy camaraderie does make a nice atmosphere in which to conduct our daily routines.

What happens, however, when a decision is required which is not readily accepted? This can occur at any time and under any conceivable circumstances when your image is that of "one of the boys." The very act of stepping out of that mold makes your decision suspect in the eyes of your subordinates. "What's the matter with old Joe?" is their immediate reaction. Then possibly anger, inflexibility or aggressiveness takes over.

What may have been just a simple decision has now become a battleground. Feelings have entered into the process and they have not been disciplined through daily experience. Don't equate discipline with blind obedience. Democracy is not confined to the other side of the main gate. It takes skill, time and practice to hone knowledge, logic, abilities and just plain horse sense into discipline. Without constant exercise, self discipline will never grow.

Now, instead of aircraft commander; substitute shift leader, section chief, NCOIC, supervisor and even commander. How does self discipline stack up in your leadership role? Are you a leader or a "good old boy"?

"Of all the causes which conspire to blind man's erring judgement, and misguide the mind, What the weak head with strongest bias rules, is pride, the never failing vice of fools."
—Alexander Pope

"Pride Goeth Before ..."

by Capt Michael W. Ryan
37 FTS (ATC)
Columbus AFB, Mississippi

Scattered thunderstorms associated with a weak cold front the weatherman briefed us about earlier had apparently really gotten their act together. Nature was doing her thing and turning them into a squall line which metro said stretched from just south of Nashville, Tennessee, to Monroe, Louisiana. But center claimed that one of Delta's big jets had just gone through them at FL 230 with no problems noted, so I thought we probably could too. Besides, the student at my left was excited about the prospect of seeing a little "real" weather, and I didn't want to disappoint him or appear overly concerned. I tried to console myself with the fact that I had negotiated much worse weather prior to coming to ATC, while flying the Starlifter. I also tried to suppress the undeniable fact that the T-37 is strictly a day, VMC-only aircraft when compared to the C-141.

When I received orders back to ATC nearly a year ago, I was pretty excited about the prospect of returning to UPT and sharing my vast flying knowledge with those lucky enough to learn at my feet. Thus, I left MAC as a young aircraft commander, convinced

Third Place, 1980 MAC Flying Safety Writing Contest

that ATC was clearly getting the best end of the deal. Imagine my surprise when I showed up at my new base, and I got a "MAC aux-crewmember" brief: "Sit down, shut up, and keep your feet off the seats!" That was when I decided that these guys were obviously not aware of how fortunate they were to have me in their unit, and that I would simply have to demonstrate my superior ability. I would also have to avoid any sign of weakness or fear if I was going to prove myself to these ingrates.

Thus it was that I found myself trying to get back to Columbus AFB on my first student cross-country. The student had done very well so far and impressed me with his restrained enthusiasm. He flight planned the last cross-country leg unassisted and did so admirably.

"Snap 70, Memphis Center!" (Have you ever noticed how comforting the controller's voice sounds during anxious moments?)

"Go ahead Memphis, this is Snap 70," Lieutenant Miller calmly replied, totally oblivious to my concern.

"Yeah, Snap 70, you've got company traffic, Snap 72, up ahead that has decided to divert into Fort Campbell. He said that squall line looks pretty bad and he decided not to give it a go; he asked me to pass the word on to you."

"Thanks a lot, center. We'll let you know in a few minutes if we need any help," I replied.

Snap 72 . . . that must be Lieutenant Jim Denny, instructor pilot extraordinaire. As my "Buddy IP" he took his responsibility seriously—perhaps a little too seriously—I thought. He had already mildly annoyed me a couple of times with his overzealous suggestions as to what I should or shouldn't do. Oh well, he probably hasn't had the opportunity to fly through as much weather as I have, I reasoned.

I really didn't want to spend a night at Fort Campbell, Kentucky. Neither did Miller, whose wife of four months expected him home. Since he had told her that I was the best IP in the flight, I felt obligated to get him back home on time. Besides, another night out and I would have to turn my BVDs inside out—a trick I learned in MAC.

We began picking up ice almost as soon as we entered the clouds.

The line of thunderstorms up ahead grew even more imposing. Some of the larger build-ups appeared to be topping out above 30,000 feet, but there still were some valleys in them where an intrepid aviator could get through in the clear. Center assured us they could vector us through it. I wondered why Denny had given up so easily as my student turned to the 160° heading that center said would take us around the really bad stuff. We had climbed to FL 250 already, but it looked like we would soon be in the cirrus anyway. Although center told me heading 160° would keep us out of the heaviest weather, we began picking up ice almost as soon as we entered the clouds. It wasn't very heavy icing, but as it started creeping up from the bottom of the windscreen the engine-ice-detect light came on. I was just about to tell the Lieutenant not to worry, that the Tweet can handle much more ice than this, when it felt like we drove off the edge of a cliff. As the turbulence intensified, I considered doing a 180, but decided it would be better to just hang on and press through. I was trying to remember my thunderstorm-penetration procedures when I saw the first flash off to my left. As I attempted to punch the button and ask center what they had done to me, I noticed that the icing had intensified. Outside it looked like we had flown into a blizzard; I thought I could even hear ice hitting the airplane. Slowly my forward visibility was obscured as the windscreen totally iced over. The airplane was lurching violently now, and as I tried to get my hand on the throttle, center called, saying they had lost radar contact (the IFF antenna had probably iced over) and suggesting a heading change to 210°. I looked at the RMI but the turbulence was so severe now I

couldn't focus on my flight instruments. I finally managed to grab the throttles, punch the mike button, and declare an emergency and my intention to descend. Memphis Center replied that I was coming in broken and barely readable but understood that I was "experiencing difficulty." Experiencing difficulty my sweet ——————! Something's got to give if we have to put up with much more of this, I thought. Then I noticed the clatter of hail and wondered how much damage *that* was doing. I realized I was already 1,000 feet low as I retarded the throttles to start down. We were still being bounced all over the sky when Miller subtly reminded me that he was still with me. I looked over and saw him missing his sick-sack more than he was hitting it. I still couldn't see out as we descended through 10,000 feet. Passing 8,000 feet the aircraft shuddered as the ice finally got to the left engine. The left rpm gauge started winding down, and I immediately hit air start and went to fuel system emergency. I couldn't get Memphis Center to talk to me, so I couldn't advise them of this latest development. I also had no idea if my present heading was what I needed—or if, or when—I'd be getting out of this mess. I couldn't get my left engine restarted so I decided to continue the descent and try again later. For some reason I had a flash of Jim Denny standing in Campbell Base Ops drinking a Coke. At about 5,000 feet, the right engine gave up too. The stifling effect of sheer panic would have probably been overwhelming had I not been so engrossed in simply flying the airplane. I decided if I couldn't get at least one engine started by the time I reached 2,000 feet I would eject even though I didn't relish the thought of punching out into a thunderstorm. I remembered reading in *Reader's Digest* once about a guy who did that. He had faded in and out of consciousness for about an hour while the updrafts took him up and the downdrafts brought him back down. I totally ignored Lieutenant Miller as I frantically tried to get at least one J-69 to respond. Some of the ice had blown off the windscreen when I leveled at 2,000 feet and mentally prepared to command, "Bail Out!" Suddenly we entered the most severe turbulence thus far. The aircraft went totally out of control and I lost all concept of what my attitude was. The terrifying thought that we might not survive entered my mind for the first time. Just as it seemed all hope was lost, we popped out of the clouds, wings level, right above the trees. There in front of us, through the one clear spot on the windscreen, I saw a car with its lights on in the downpour. I decided that our only chance was to try and land on the road in front of the car.

. . . I leveled at 2,000 feet and mentally prepared to command, "Bail Out!"

For a moment I thought I had made it as I flared onto the long, straight stretch of road. Then the storm struck with one last blast. I couldn't keep the left wing from rising even though I had full left aileron deflected. The left wing came up, the right wing dug into the soft shoulder of the road and I felt the aircraft lurch to the right. Everything faded out in a painful, whirling mass of grey.

When I regained consciousness six days later, the doc explained that he expected me to eventually recover from my assorted injuries. When I asked about Bob Miller, there was a moment of strained silence—then my wife explained that his funeral had been held the previous day in his hometown in Illinois. Later, as I began to absorb the senselessness of this tragedy, I realized I had betrayed the trust of a great many people. I couldn't suppress the thought that the late Lieutenant Miller's young widow probably no longer believed that I was the best IP in the flight. Neither did I.

ABOUT THE AUTHOR

Captain Ryan received his commission through the ROTC program at the University of Tennessee in 1972. After graduating from UPT at Moody AFB in 1973, he was assigned to C-141s at Norton AFB, California. In 1976, after upgrading to aircraft commander, Captain Ryan was reassigned to Columbus AFB, Mississippi, as a T-37 instructor pilot. He has served as a line IP and a wing staneval pilot.

Mid-Year Accident Statistics

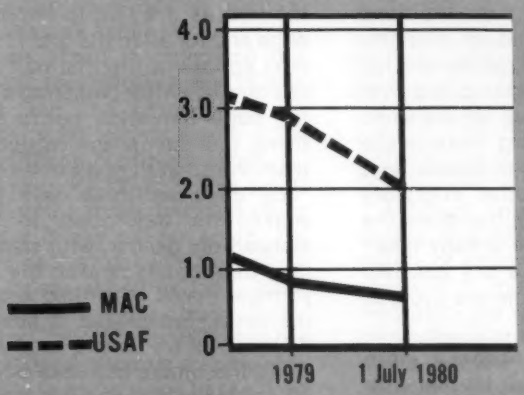
Military Airlift Command units sustained two class A and two class B flight mishaps in the first six months of 1980. This equates to about .57 accidents for every 100,000 hours of flying time for each category. If this downward trend continues, we will beat 1979's year-end rates by substantial margins.

The Air Force Inspection and Safety Center (AFISC) predicts nine class A and 11 class B flight mishaps for MAC in 1980. With only two of each category occurring in the first half of this year, the way is open for us to give their forecasting computer a real jolt.

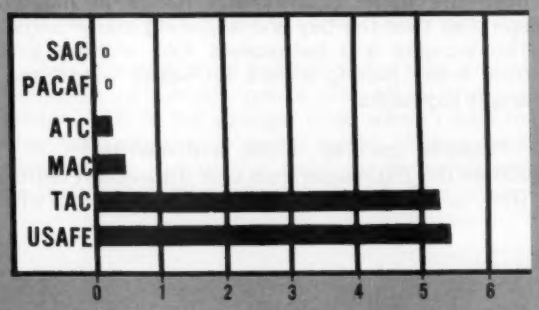
Although several other MAJCOMs are also doing very well at the mid-year point, including SAC and PACAF, which both had zero class A mishaps as of 1 July, we at *TMF* are optimistic that MAC people will continue to sustain our downward trend for the remainder of this year and into 1981 as well.

As we look at the accompanying graphs, keep in mind that these lower numbers and descending lines represent an actual saving in irreplaceable lives and the preservation of precious national defense resources.

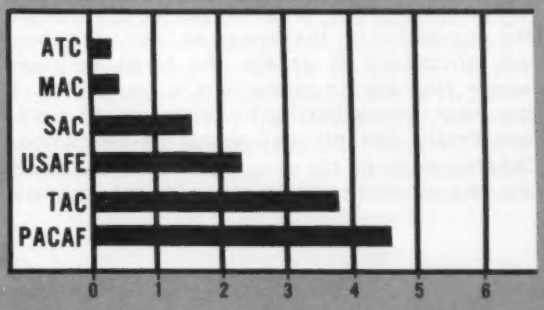
USAF and MAC
Class A Mishap Rates For First Six Months of 1980



Class A and B Flight Mishap Rates as of 1 July 1980 for selected MAJCOMS



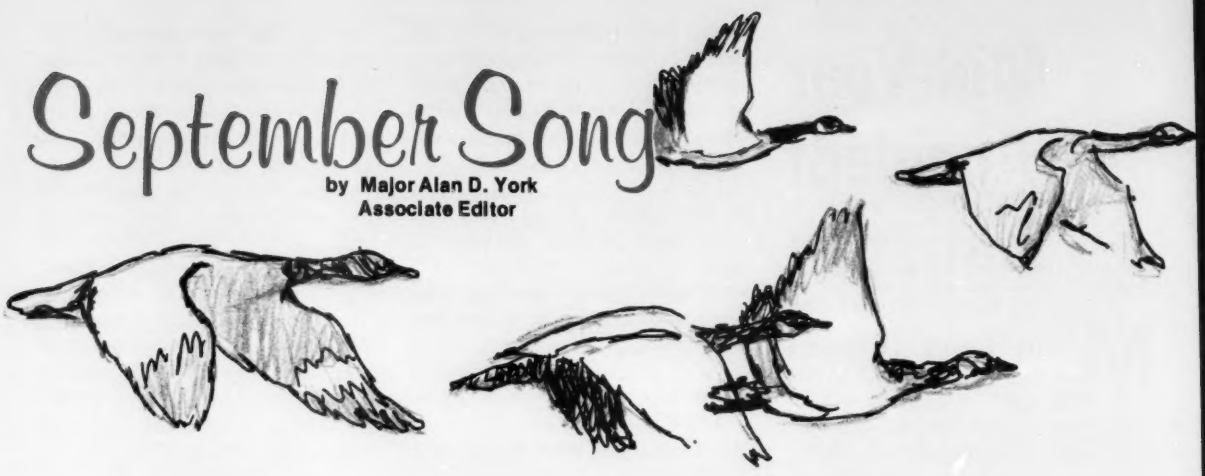
Class A per 100,000 flying hours, fatal or over $200,000 damage



Class B per 100,000 flying hours from $50,000 to $200,000 damage

September Song

by Major Alan D. York
Associate Editor



The same survival instinct that prompts birds to fly south for the winter can become a hazard to the survival of human aviators.

A chilly wind ripples across Lake Melville, ruffling the soft black down on the long neck of the Canada goose standing straight-legged on the south shore. The old gander tilts his head up and faces the wind, sensing the first signs of approaching winter. He has felt the same September blasts many times before. Here on the inlet between the Labrador Sea and Goose Bay, thousands of geese, ducks and other migratory birds are preparing for the seasonal trek down the Atlantic flyway. In fact, some have already taken to those invisible highways in the sky just like untold generations before in the timeless cycle of migration and regeneration.

On the shore, the old goose honks a more anxious and compelling call and is instantly joined by a tumultuous chorus of hundreds, many of them young goslings hatched here in the summer and, like the youth of any species, full of energy and impatience. For the young ones this will be the first trip, and their numbers will swell the population on the flyway as they wing their way southward to escape the harsh northern winter. Now the old gander runs across the top of the water, wings flapping furiously into the wind, and finally lifts off and circles as he climbs. Others join up on his wings, quickly establishing the characteristic V-formation. As they slowly circle once more, each bird looks intently down at the lake as if trying to imprint its exact location once and for all in his brain for the eventual return next spring—a trip that half the young ones may not survive. After gathering a few more stragglers the huge formation heads south at 1,500 feet, flying just below the ragged gray overcast. For them the great migration has begun.

By daybreak three days later, the flock has worked its way down to Delaware Bay. The stalwart old gander, with stamina gained by many long flights, has retaken the lead after one of the younger males grew tired and dropped back from the point. Being lead is strenuous and only the fittest fliers are able to keep up the pace out front while the others can take advantage of the extra lift available from the flapping wings just in front of them. The leader senses they will soon have to find a resting place after flying much of the night. The solid layer of clouds has followed them down from the north country and hangs in ragged spindles over the bay and adjoining marshlands. The sloughs and backwaters look inviting and offer many resting places for weary wings and empty stomachs.

"Cleared as filed, climb and maintain . . ." comes the flight clearance over the cockpit radio. The copilot busily copies the instructions that will

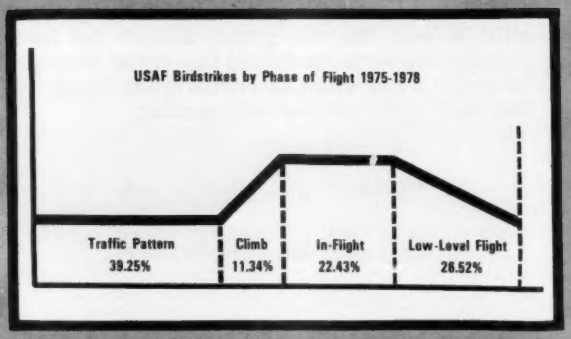
guide the C-5 on its cargo mission from Dover, Delaware, to Rhein-Main, Germany. The Galaxy is loaded with four huge communications vans, each weighing over 20,000 pounds, and it has enough fuel to make a non-stop transatlantic flight. Moments later the giant airlifter turns onto the active runway and the pilot smoothly advances the throttles toward takeoff power. Accelerating steadily down the concrete the copilot calls out "go" speed—they are committed for takeoff. The left-seater eases back on the yoke, rotating the nose of the aircraft eight degrees into the slate-gray sky. "Gear up," he calls after they are safely airborne. Following the standard instrument departure for takeoffs to the north, they will climb straight ahead until two miles from the airfield, make a right climbing turn to the southeast, then head east toward New Jersey across the bay. "There's two DME, clear right," orders the aircraft commander. The copilot glances out his window and sees nothing but the dark ashen bottom of the solid overcast they are about to enter and the indistinct shoreline a couple of miles away. "Clear right," he confirms and the other pilot immediately rolls the huge jet transport into a 30-degree bank to the right and continues climbing. The right-seater now can look down on the small clumps of houses along the shore that mark Kitts Hummock and Bowers Beach further south. He watches for a moment as the right wingtip scribes an arc in the marsh below. When he looks back up he jerks forward as his hand goes instinctively for the intercom button. "Birds!" he yells into his lip mike, but it is too late. A shudder reverberates through the giant airplane and it yaws to the right as the aircraft commander notices the number four engine temperature shoot up and the rpm begin dropping off. The copilot glances back out to the right to scan the engine but the entire wing disappears from view as they penetrate the overcast.

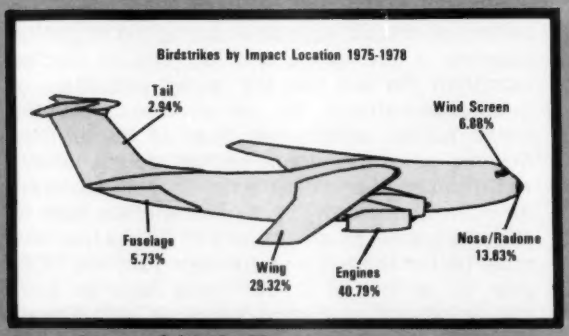
The C-5's right wing had just sliced through the formation of Canada geese just aft of the old leader. Two of the younger ones weren't able to dive fast enough to avoid being sucked into number four turbofan. A third gander splattered on the number three engine cowling. Fortunately for the crew everything but a few feathers was deflected to the outside of the inlet. A fourth goose smashed against the leading edge of the right wing close to the fuselage.

Instantly, the aircraft commander counters the yaw and descends back out of the clouds, continuing the right turn to a downwind leg at 1,500 feet while the copilot runs the checklist for an emergency engine shutdown and declares an emergency. Once the checks are complete and they are satisfied that all other systems are working normally the pilot turns base leg and brings the crippled giant in for a safe three-engine landing. Although four of their number have been lost, the V-formation quickly reforms at a lower altitude with the old gander still in the lead, honking the same discordant September song and beating his way south as if nothing has happened, still looking for the ideal resting place.

"Birds!" he yells into his lip mike, but it is too late.

Although this particular account is fictional, similar scenarios are repeated every year in a variety of aircraft, especially during the migration seasons in the spring and fall. Recent studies reconfirm the fact that the largest proportion of birdstrikes—almost 40 percent—occur in the traffic pattern within five miles of the airfield. Seventy percent of these happen during takeoff roll because of birds in the vicinity of the runway. As in the above narrative, aircraft engines seem to attract a greater proportion of bird strikes than any other part of the airplane. Between 1975 and 1978, over 40 percent of all Air Force reported birdstrikes were taken in aircraft engines, with aircraft wings accounting for almost 30 percent of the total. The Air Force just completed a two-year study which required the reporting of all birdstrikes, whether any damage resulted or not. With more complete information on the number and location of strikes available from two-years worth





Source, *Aerospace Safety*, Oct 79

of collected data, researchers are now better equipped to find ways of reducing the hazard.

The Bird-Aircraft Strike Hazard Reduction Program, better known as "BASH" is headquartered at Tyndall AFB, Florida. It was established to study the birdstrike hazard and provide recommendations on how to reduce the number of strikes to Air Force aircraft. The BASH team has developed and evaluated a variety of methods to reduce birdstrikes occurring near airfields. Following their recommendations at the local base level has reduced the number of birdstrikes by as much as 30 percent. For instance, they found that if the grass adjacent to runways and taxiways is allowed to grow to between seven and 11 inches high, birds don't congregate there as much. The extra height blocks their view of the other birds which apparently interferes with their feeling of togetherness. Grass-height management is probably the easiest and most cost-effective method yet found to quickly reduce the avian activity at most airfields.

Various harrassment programs have also been devised to help keep the birds away. But the important thing, say the BASH folks, is variety and persistence. Some birds can quickly adjust to a single harrassment technique, similar to the way hunting dogs can become more or less accustomed to shotguns going off in their ears. Local BASH programs are administered by base operations personnel after considering the particular environmental and geographical circumstances involved. Some airfields are naturally going to have more birds around than others. Langley AFB, Virginia, for example, sits right next to the Chesapeake Bay and is plagued by sea gulls who have a tendency to wander in front of arriving and departing jets. Other less natural attractions such as land fills and dumps close to aerodromes can also attract and increase the bird population. The close proximity of wildlife refuges and especially wetlands, as around Dover AFB, Delaware, create large seasonal increases of migratory birds. Travis AFB, California, also has seasonal variations plus some attractive nearby feeding places. Every base has its own peculiar bird hazard, so individual programs must be tailored to the specific situation.

Since the behavior and even seasonal flight routes of our feathered friends seem to be a matter of instinct, it is left to us to take the responsibility for avoidance, for the well being of both species.

Flying Circus

Once again the time has come to delve into that bizarre realm where the unexpected becomes the norm, and flyers and airplanes do absolutely zany and unexplainable things as a matter of course. The outcomes of these machinations are usually damaging to property and limb, but for reasons open to wide speculation (The Lord watches over fools and innocents?), rarely are they ever fatal. Some are silly and humorous, others are downright scary and sobering, but all of them provide us with a reminder that a mishap is always waiting in the wings for the careless or unwary flyer. So much for the class introduction—this edition of the Flying Circus opens, appropriately enough, with an impromptu elephant act aboard an airborne DC-8 cargoliner.

Squeeze Play

When the commerical trash haulers came out to check their cargo jet, they found they had a rather ponderous passenger in the form of a full-grown pachyderm. He was a genuine "biggie," and at takeoff he became "mildly exhilerated." So joyous was he, in fact, that he had a tendency to tap dance right out of his cage. The female handler accompanying the restless tusker attempted to confine him to the cargo area by attaching a leg chain to one of his gams. Unfortunately the space available in the back of the airplane was somewhat cramped, and as the harrassed handler struggled with the restraint, she (the handler) was compressed momentarily between the beast and its cage. For her brave efforts to recage the gyrating jumbo, which ironically settled down of its own accord in due time, the attendant received a cut and bruises to her hand. A first aid kit took care of the lady's damaged digits, and since the pacyderm had become all sweetness and light (hearted, not weight), they didn't have to implement their Plan-B and return to the airfield where they had picked up their oversized passenger, because he decided to remain inside his cage, quite contented, the rest of the way. One wonders if the big guy had ambitions to ride in the airplane's front office.

—Adapted from Flight Safety Foundation's *Flight Safety Facts and Reports*

More Cuts In De Fence

After encountering a strong downdraft on final approach, a Kestral glider touched down five yards short of the boundary fence of the airport, kept rolling, and proceeded to crash through the chain link barrier. Later the same day, a Libelle glider encountered a strong downward wind gradient during a low approach to the same airfield. It crashed into the same fence, but unfortunately for both pilot and plane, not where an opening had been made earlier in the day by the Kestral!

—Adapted from *Ostrich*

Give Me A Brake, Willya!

Ever see this message scrawled in the muck on a dirty car or truck? "Wash Me." Here's a C-141 that literally took the initiative and showed a crew that it wanted a bath. After a functional check flight (FCF) for a control problem fix, the crew returned the Starlifter to its spot on the ramp, shut down the engines using the FCF checklist and set the parking brake. Just as the scanner was deplaning, the aircraft began to roll forward. Although emergency brake pressure still indicated normal, application of the last-chance binders failed to halt the unauthorized taxiing. Positioning the brake selector switch to normal and then back to emergency also had no effect. To the crew's consternation, the free-wheeling Starlifter trundled about 300 feet across the tarmac, taking out several security stanchions and a hank or two of rope along the way, departed the paved parking

area and finally came to a halt on a grassy upslope that formed part of an embankment around the washrack. Sounds like the big bird was trying to tell that crew something—it sure seemed to know where it wanted to go!

Coffee Nerves

Hot coffee and moderate turbulence combined to nearly cook a copilot's goose not long ago. Just as a steaming cup of java was being passed above the right-seater's right shoulder, the airplane encountered a patch of sky with bumps in it. Most of the coffee found its way out of the cup and all over the copilot, causing second-degree burns on his neck and down his back. The crew diverted into an enroute base for emergency medical attention. We understand that since his recovery from this unfortunate accident, the copilot claims that all coffee, including even a well-known decaffeinated brand, makes him nervous—especially when a cup of it is passed to him over his right shoulder.

Care for a Light?

Having a survival flare ignite in the cockpit is guaranteed to increase a pilot's adrenalin level, in addition to confronting him with a serious emergency situation. The following occurrence befell an instructor and a student while they were practicing touch-and-go landings in a Cessna 172. When the survival flare suddenly went off in the close confines of the puddle-jumper, the instructor declared a mayday and made an immediate emergency landing from the downwind leg of the landing pattern. He got the 172 on the ground so "quickly" that on touchdown the nosegear collapsed, allowing the prop to mangle itself on the macadam. The cockpit was quickly gutted by flames, and both pilots received second and third degree burns before they could escape the conflagration. No explanation was provided as to how the flare went off, but we can't help thinking that it would be one heck of a way for one pilot to get the other pilot's attention.

—Adapted from USN *Weekly Summary*

Nobody Would be *That* Careless, Would They?

Aircraft preflight was done inside the hangar because the weather outside was clear and three-degrees Farenheit, with winds out of the northwest at 15 to 20 knots and ice and snow on the runways and taxiways and blowing all over the field. (Now that should have been a hint that it wasn't a good night to go flying, but nooooo.) Despite such miserable conditions the airplane was removed from the hangar, along with a sister ship, by the pilots and two other flying club members, using towbars. Prestart, start, poststart and pretakeoff checks completed, the private pilot and his certified flight instructor (who was giving him a night currency and biennial checkride) proceeded with what they thought was an uneventful flight. Flying to a municipal airport a half-hour away, they shot three landings and then returned to home base. The pilot made the final landing, taxiied in, shut down, and he and the instructor returned the bird to the hangar, secured it and departed for the night.

Next morning, the crash crew was on a routine FOD patrol when they found a towbar on the side of the duty runway. A check revealed that the bar belonged to the aeroclub, and further investigation showed that it had been attached to the aforementioned airplane. On takeoff the towbar had actually rotated about the free-castering nosewheel, swung up and hit the prop. The tips of the blade were curled back three-quarters of an inch, and matching marks on the towbar and the prop corroborated the incident. Had the pilots really followed the checklist to a "T," they would have accomplished item seven, which states: "REMOVE THE TOWBAR." Even a quick walkaround before engine start could have also prevented this needless incident. A hearty "poorly done" is in order for both pilots.

—Adapted from *Approach*

photos by TSgt Bill Boardman

Pilot incapacitation may be more common than you think.

Your Job or Your Life

by Major Alan D. York
Associate Editor

It was 10:30 p.m. and this was the 15th approach in an already 14-hour-long duty day for the crew of the DHC-6 Twin Otter commuter airliner. The captain, a veteran pilot who was also a company vice president, was very annoyed by the fact that they had been forced to extend their planned 12½-hour duty period because of bad weather. Cockpit instruments clearly indicated they were coming in well below the ILS glide slope as the propjet sliced through the pitch black clouds which were restricting visibility all the way down to instrument landing minimums. The first officer made the "required" monitoring calls about being low on the glide path, but the captain didn't respond. Besides having a reputation for being a hard-driving individual, the left-seater was also known for "duck-under" approaches; that is, descending prematurely in order to pick up visual contact with the ground, and then flying level until the runway was sighted. He had also gained additional notoriety among copilots for generally disregarding checklists and crew coordination. But who was going to scold a company V.P. for deficiencies in professionalism?

The aircraft descended further and further below the glide slope until finally, at one-and-a-half miles from the runway, with the glide slope indicator at maximum deflection, the Otter crashed. The captain was killed, but the first officer and all eight passengers survived with varying degrees of injury.

A perfectly good airplane had been driven into the ground. Investigators identified several factors that contributed to this needless tragedy. The most immediate one, however, concerned what was described as the captain's subtle incapacitation and the failure of the crew—meaning the first officer—to recognize and react to such a "gross deviation from acceptable approach parameters."

The only food the captain had taken during the entire duty period was a Danish pastry and coffee, and that was consumed in the late afternoon. By the time he was on "final" approach, he was suffering the duel effects of hypoglycemia and fatigue. Symptoms of low blood sugar, such as subtle mental confusion, slowing of cognitive processes and impaired psychomotor or thought-action coordination were taking their toll and impairing normal function. And the impairment of

normal function is what I mean when I use the broad term, incapacitation. Its effects can run the gamut from sudden death to a headache, and can result from any number of psychological or physiological causes. In this case, because the impairment was subtle and insidious, it probably presented a greater hazard to flight than if the pilot had become more obviously disabled. For example, if the left-seater slumps forward against the shoulder harness, totally unconscious, you know you've got a problem.

For those skeptics who may think this was just a freak occurrence, allow me to insert here the results of a study conducted by commercial flight simulator operators a few years ago. During recurring airline simulator training sessions, researchers surreptitiously arranged beforehand with one of the pilots to feign incapacitation when given a pre-arranged signal by the instructor. An

ADI flag or flickering warning light would prompt the pilot flying to keep his hands on the yoke and throttles but make no further control inputs. Neither was he to respond to any verbal communication either over the intercom or radio. "Aha," you may say, "any copilot that's not comatose would catch such blatent deviations and obvious inactivity and immediately take over and save the simulator from destruction." Well, maybe *you* would, but 25 percent of the highly experienced, professional airline pilots tested didn't, and allowed perfectly "flyable" simulators to "crash." Many airlines still use the subtle incapacitation exercise in their recurring flight simulator programs to acquaint pilots with the problem and how to deal with it. At the same time, they build healthy cockpit habits and crew discipline.

Of course there were other factors involved in the DHC-6 commuter crash. The fact that the captain was a company vice president and his copilot had been with the company for only two months may have added another obstacle to a safe recovery. The first officer was on probation and well aware that his employment could be terminated with or without cause anytime during the first year. This no doubt contributed to his reluctance to challenge the older pilot for deviations that were apparently not that unusual for him anyway. Another factor was that the captain had flown only 12 hours in the preceding 90 days, and most of that in VMC conditions—while the accident occurred at night in weather. These are all additional factors but not causal in themselves. The central cause of the mishap remains the crew's failure to recognize and react to pilot incapacitation, which brings me to the central purpose of this article: How we can recognize and react to total or partial incapacitation in other crewmembers, so we don't end up riding one in.

The primary consideration is detecting incapacitation and taking corrective action before it's too late. In the airline simulator study, even those crewmembers who were facile enough to avoid totaling the "box," still took between 30 seconds and four minutes to recognize the captain's feigned incapacitation and correct the situation. The copilot of the Twin Otter had one minute and nine seconds between the ILS outer marker and impact, during which time a go-around or safe recovery could easily have been accomplished. An ironic footnote here—if he had taken control and, as a result, saved the captain's life and the airplane from destruction, he probably would have been fired on the spot for not behaving like a "good copilot," i.e., do what you're told and don't challenge the captain's authority. He would have had to ask himself which was more important, his job or his life and the lives of everyone else onboard. That's a question all of us should ask ourselves—and hopefully come up with some priorities—before we're confronted with a situation that poses a grave hazard to safe flight. To put it simply, any deviation from normal procedures or expected performance should alert us to a possible onset of subtle incapacitation. Even if it turns out instead to be only a momentary lapse of attention, the cause of which lies between the ears of the person flying the airplane, we should be comforted by knowing the stan-eval folks would be proud of us for helping to maintain high standards of performance and refusing to condone sloppy flying. Evaluators, as we all know, aren't paid to be nice guys or for being

diplomatic. That's not their primary function, and for good reason. When flying with fellow squadron members, however, we probably would want to use a little finesse and diplomacy when challenging someone's deviation, if time and circumstances permit.

Many airlines use what they call the two-communication rule to alert crewmembers to possible incapacitation. It goes something like this: Anytime a crewmember doesn't respond appropriately to two verbal communications, or when he or she doesn't respond to even one verbal stimulus when it's associated with a "significant" deviation from a standard flight profile, watch out! Of course, during takeoff, approach and landing, *any* deviation, whether verbal or not, can be significant. The idea is to increase the suspicion level of the other crewmembers so they'll be warned of possible impaired performance in time. Like most rules though, this one should be applied with a sprinkling of good judgment. For instance, the guy who constantly chirps that the pilot is ten feet off altitude while in the pattern on a hot, convective, summer day is liable to end up incapacitated himself. But he should make a mental note of even a ten-foot deviation and subsequently recheck altitude in his cross-monitoring of flight instruments. If all this sounds a lot like the "crew concept," you're absolutely right. Along with regular use of standard operating procedures you should be able to recognize possible incapacitation early and also give a general boost to the professional conduct of the flight.

Any deviation from normal procedures or expected performance should alert us to a possible onset of subtle incapacitation.

Once you've identified an incapacitated pilot, what comes next? Because there are so many kinds and degrees of incapacitation, it's difficult to offer too many specific suggestions—but I'll do it anyway. The first thing is so obvious that I'm going to emphasize it for those folks, like me, who have a penchant for stomping ants: maintain control of the aircraft to keep from crashing. After the other pilot has wrested control from the incapacitated individual, he or she must check the position of essential switches that may have been inadvertently changed by the disabled flyer. Next, you might want to give ATC a call and let them know what's happening. Many airlines suggest that in nearly all cases an emergency should be declared and the auto-pilot used to reduce the cockpit workload. Depending to some extent on the type and severity of the incapacitation, the impaired pilot should be restrained to keep him or her from falling forward, or even worse, falling on the center console or otherwise flailing around. The seat should be moved back so the ailing pilot can be removed with minimum trouble and treated, if possible, by other crewmembers, preferably those not having cockpit duties. Bigger airplanes with larger crews have an obvious advantage here. Another good reason to support the removal of a badly incapacitated pilot is to reduce the obvious distraction, especially if the person is slumped over unconscious.

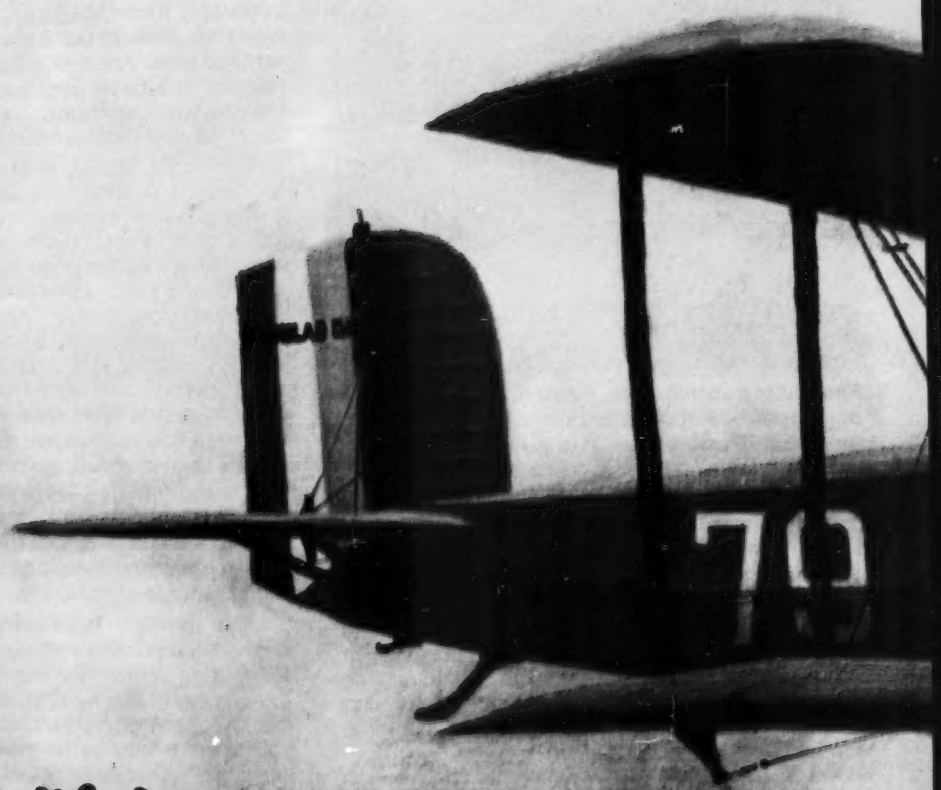
If the crippled crewperson happens to be the aircraft commander occupying the left seat, the copilot has to decide whether to change seats. Factors effecting that decision would include such things as how comfortable the copilot feels in the left seat, can he or she reach essential switches from either seat, and where are the steering controls located? A word about steering—most airplanes have sufficient directional control available from either seat to bring them to a stop after landing. Of course, if you're fortunate enough to have a qualified third pilot on board, things should go a lot smoother with less hassle in preparing for landing, giving the copilot even less reason for any seat swaps. The consensus seems to favor sitting where you're most comfortable and keeping cockpit disruption to a minimum.

Other things to consider while pre-thinking this very real possibility include: whether to configure for landing earlier than normal; whether to stop on the runway, taxiway or parking spot; what to tell the ATC controllers and what kind of assistance you should request to meet the airplane. These and many other considerations depend largely on the individual situation, but if you think just a little about them now, perhaps it won't overwhelm you if that day arrives when the person next to you becomes incapacitated in flight.

Douglas C-1

Useful payload of 3,000 pounds with a top speed of 100 mph and a cruising radius of 500 miles were some of the specifications for the first C-designated aircraft purchased by the U.S. Army. After one aircraft company went bankrupt trying to meet those performance standards plus the requirement to be able to haul a Liberty engine or a four-bladed prop, the Army revised the specifications deleting the need for the prop carrying capacity. The new Douglas Aircraft Company, Inc., won the design competition and nine C-1 transports were ordered in 1924.

The C-1 was a closed-cabin biplane with an open cockpit seating the pilot and copilot side by side. Three models were produced: nine C-1s (one later modified and designated C-1B) and seventeen C-1Cs. The C-model had a wing span of



The Airlift Legacy

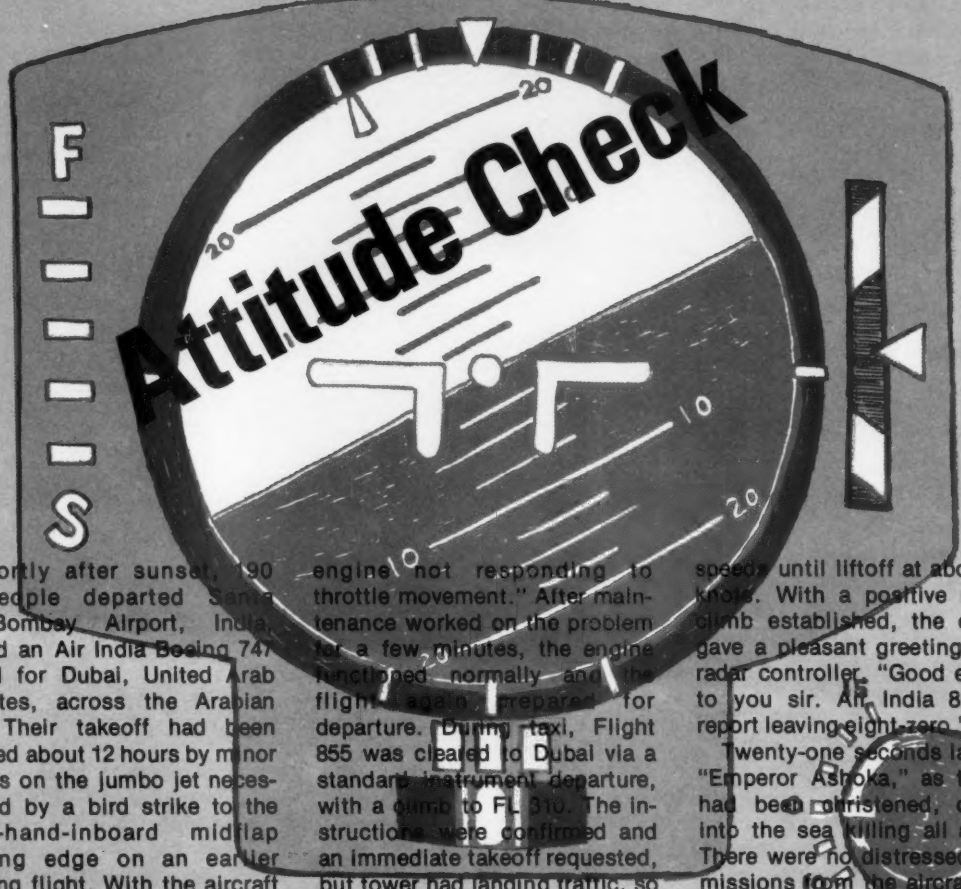
56 feet 8 inches and a length of 35 feet 8 inches. Its gross weight of 6,483 pounds was powered through the sky at a maximum speed of 121 mph by a 400-hp Liberty engine. It could haul nine passengers, or one Liberty engine, or four litter patients and an attendant.

Trap doors in the top and bottom of the fuselage were used for loading "outsized" cargo. Loading the Liberty engine was a cumbersome process requiring the labor of three men for two hours, and the use of a portable quadripod hoist which could be carried aboard the aircraft. Despite these inconveniences, the operational squadrons agreed that the C-1 was the "best yet" of any large transport aircraft. Seventeen C-1Cs were ordered in 1926 to meet the growing demand for airlift.

The C-1 made its most notable contribution to aviation history as a tanker, not as a cargo hauler. In 1928 two Douglas C-1s were outfitted with primitive refueling equipment. In January 1929, their air-to-air delivery of aviation fuel and oil kept the Fokker C-2, "Question Mark," aloft for 150 hours 40 minutes and 15 seconds, thus helping Captain Ira Eaker (now Lt Gen Retired) and his crew set a world's record. After this moment of glory as a supporting actor, the C-1 continued airlifting men and material for the Air Service until its replacement by more modern aircraft. Unfortunately, its passing was unheralded, and none were preserved so we could see in person today the airplane that actually began our airlift legacy.

Mishap with a Moral

Believing the gauges is a must for instrument flight, but should you rely on just one to the exclusion of the rest?



Shortly after sunset, 190 people departed Santa Cruz-Bombay Airport, India, aboard an Air India Boeing 747 bound for Dubai, United Arab Emirates, across the Arabian Sea. Their takeoff had been delayed about 12 hours by minor repairs on the jumbo jet necessitated by a bird strike to the right-hand-inboard midflap leading edge on an earlier training flight. With the aircraft fixed and inspected, the crew called for a push-back at 1938 hours local time.

While taxiing out for takeoff, however, the Air India Captain was forced to announce, "We are returning to the parking bay, as we are finding number one engine not responding to throttle movement." After maintenance worked on the problem for a few minutes, the engine functioned normally and the flight was prepared for departure. During taxi, Flight 855 was cleared to Dubai via a standard instrument departure, with a climb to FL 310. The instructions were confirmed and an immediate takeoff requested, but tower had landing traffic, so the 747 had to wait a few more minutes.

At 2008 hours, Air India 855 was finally cleared for departure, and the aircrew completed the before-takeoff check. As the Boeing rolled down runway 27, the first officer called off check speeds until liftoff at about 145 knots. With a positive rate of climb established, the captain gave a pleasant greeting to the radar controller. "Good evening to you sir. Air India 855 will report leaving eight-zero."

Twenty-one seconds later the "Emperor Ashoka," as the 747 had been christened, crashed into the sea killing all aboard. There were no distressed transmissions from the aircraft prior to the crash. The flight had lasted 101 seconds and carried the aircraft, crew and passengers about five miles (8.6 km) from their takeoff point. A detailed investigation of the mishap was conducted by the Indian government covering the

mission conditions, aircraft and crew.

Environment

Weather conditions when the Air India flight started were nearly ideal, and were forecast to be pleasant throughout the route of flight. The mission was familiar to the crew and the only unusual event was the 12-hour delay. This setback had not disturbed the crew's rest or extended their duty day. The delay did have a more subtle effect on the mission, however, because it placed the departure time after dark. This is only significant because the takeoff from runway 27 at Bombay goes out directly over water, so at night there is little visible horizon. Even when coupled with complex altitude and heading restrictions on the SID, this takeoff into a "black hole" should not have presented insurmountable problems to an experienced crew working with excellent avionics. Takeoff environment and departure procedures were, at worst, only contributing factors to the mishap.

Aircraft

Upon arrival from New York, the Boeing 747 was in good condition, fully certificated and airworthy. Qualified maintenance personnel promptly repaired the damage from the bird strike which had happened during a local training sortie. All required inspections were suitably documented before the start of Flight 855. The Boeing 747's weight and balance were within limits. Post-crash investigation showed that the aircraft was structurally sound and suffered no flight control malfunctions prior to hitting the water. Additionally, all four fanjets were producing thrust until they were drowned by the Arabian Sea.

A check of the flight instruments revealed a possible cause of the crash. The pilot's ADI had malfunctioned so that it indicated a false right bank with no warning flag showing. However, this alone should not have brought the 747 to destruction, since all other instrument systems appeared to have been working properly, including the copilot's ADI and the standby attitude indicator.

Aircrew

Three qualified crewmembers manned the Boeing's cockpit: captain, copilot and flight engineer. The captain made the takeoff from Bombay. Sometime shortly after liftoff the copilot called for a positive rate of climb, indicating the left-seater may have been having a little trouble making the transition from visual to instrument references. Soon after this call, the left ADI began to go bad without warning. The flight data recorder shows a series of uncoordinated and irrational flight control inputs from about this time on which indicate the captain was flying by reference to the malfunctioning attitude indicator alone.

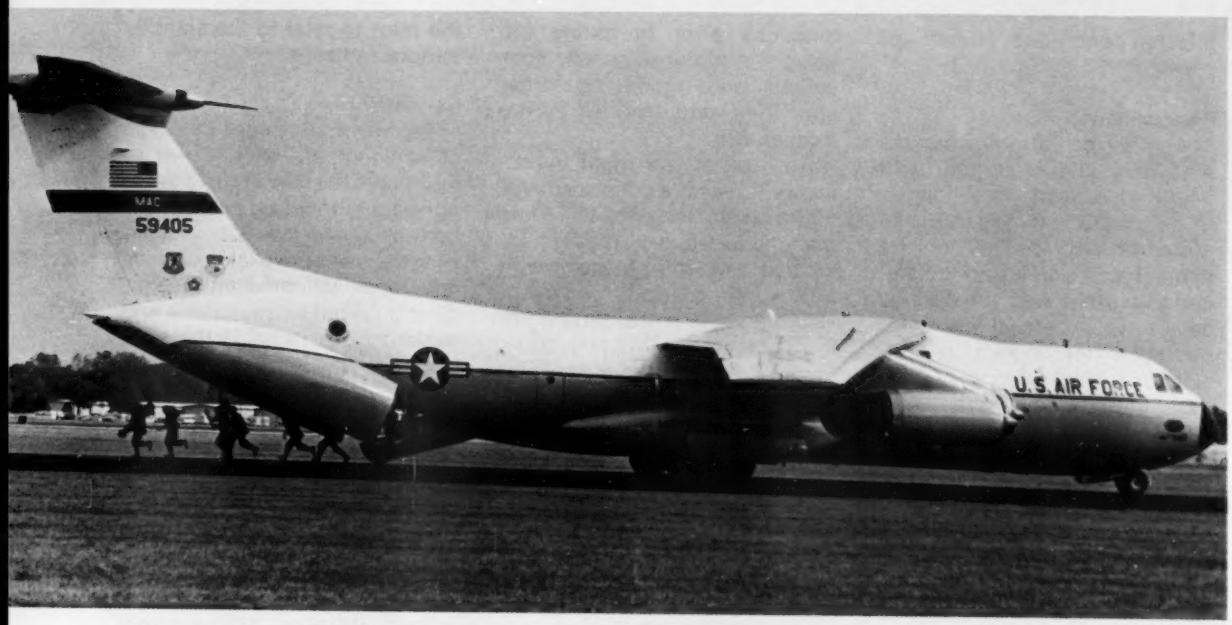
For unknown reasons, the copilot did not recognize the AC's disorientation and inability to properly control the aircraft. Or if he did see the problem, he didn't take control of the jumbo jet in time to prevent the accident. The only crewmember who correctly perceived the deteriorating cockpit situation was the flight engineer, who warned the pilot to refer to the standby attitude indicator.

Conclusions

The ways to prevent this type of accident are well known to most professional pilots. A good instrument crosscheck by both AC and copilot coupled with the use of available outside references will make attitude indicator failure more obvious and easier to deal with. If the pilot becomes disoriented or loses attitude references while the copilot's instruments remain unimpaired, then the right-seater should be given control of the aircraft. Additionally, the copilot must be prepared to take over from an incapacitated pilot on a moment's notice, and be willing to do so without command. Finally, the sincere warnings of other crewmembers should never be ignored—they have just as vital an investment in safe mission accomplishment as the aircraft commander.

Like many mishaps, this crash was ultimately caused by human errors occurring at the end of a seemingly unconnected series of minor deviations from ideal conditions. We've mentioned several factors which by themselves should not have caused the accident. The combination of environmental factors and mechanical malfunctions should have alerted the crew to recognize the increased risks and the possibility that any additional malfunction or human error could prove fatal. In this case, attention channelization was the last human factor added to the chain of events and the results were disastrous.

—Adapted from BOAC's *Air Safety Review*



ERO

Extra Risk Operation

Engine running on and off-loads are often required during exercises and have been used extensively during combat operations. Whether you call them ops stops, combat off-loads or EROs, getting people and cargo on and off an airplane with the engines running is an increased-risk activity.

The environment outside the aircraft during the ERO creates the most safety hazards. No matter which airlifter you're flying, it generates noise, heat and prop or jet blast. These factors make for an unpleasant work situation and people naturally tend to hurry their jobs so they can get out of the undesirable surroundings.

We can decrease the risks to our passengers, cargo and aircraft by following the checklists, Tech Orders and regs covering engines-running operations. While some MAC aircraft have a Dash One checklist specifically for EROs, others don't. In either case, following common-sense rules can help keep the operation safe.

- Don't hurry unnecessarily.
- Crewmembers, vehicle drivers and passengers must have a complete briefing, so everybody understands what's happening.
- Restrict EROs to areas with the least amount of loose debris and dirt.
- Set the parking brake and use minimum engine power.
- Configure aircraft as required by T.O., or to help reduce prop or jet blast.
- Station a crewmember in the cargo compartment as a safety observer and communication link with the cockpit.
- Offload passengers first, then cargo and rolling stock.
- Onload cargo and rolling stock first, then passengers.
- When the loading is complete, make sure the aircraft is properly configured and the loadmasters (cabin crew) are ready to go.

Safe and efficient engine running on and offloading is an important part of MAC's combat capability and day-to-day operations. Crewmembers can minimize the risks by making safety part of the job.

Thanks to Major Lawrence E. Gill, 463 TAW, for this story idea. —Ed.

FLYERS ANONYMOUS

We don't know if it's because helicopter pilots do more wild and crazy things, or the fact that they are more willing to come forth with candid accounts of past transgressions, but this month's anonymous anecdotes feature *three* helo honchos and one former B-52 type.

Damn the Weather, Full Speed Ahead!

I was a brand new Huey copilot, so when the AC vetoed my suggestion that we quit for the day on account of increasingly bad weather, I just clammed up and went along with his decision. He was in a hurry to get home that day for some reason, so we took off in spite of the fact that a heavy snowstorm was in progress. The snow was so heavy, in fact, that the wipers and defrosters couldn't keep the windscreen cleared well enough for us to see out. As a result, I had to navigate the best I could using a highway to guide us and checking our position along it by reading the road signs through the chin windows, which were still relatively clear. We flew along at 40 knots about 50 feet off the ground while I navigated and the pilot stayed on the gages. I'm sure we were lower than the grain elevators and some of the power lines in the area, but luckily we didn't hit anything as we thrashed around in min-viz conditions for half an hour or so before finally breaking out. I've thought about this situation a number of times, and every time I recall it, I get mad all over again for letting that AC with get-homeitis bulldoze me into jeopardizing the lives of the passengers and myself by pressing on in weather which wasn't fit for flying.

Long Lost Lake

It was a routine sortie, flying our Huey to drop off some cargo and returning to home station. Since we were empty going back and the copilot was an avid fishing enthusiast, I decided to divert a few miles out of the way and show him a neat lake I had seen on a previous trip. I thought I had a pretty good idea of where it was located, so I didn't even bother checking a terrain chart for distance and heading in relation to our track. We wagged the fuel and figured it was a bit close, but

decided we had enough left in the tanks for the trip back even with a slight detour. Once we got going, however, the lake turned out to be a "fur piece" further away (and off our track) than I had counted on. In addition, the winds—which we had ignored in our fuel guesstimate—turned out to be pretty strong headwinds. We eventually found the lake and had a look at it, but by the time we were about half way home, it became painfully obvious our chopper would be on fumes when we arrived; that is, if we made it at all on the gas we now had remaining. Luckily, there was a private field nearby, and we ducked into it. I happened to know the operator personally, and he provided us with enough fuel to get back to our base safely. Figuring there would be worse repercussions if the squadron commander found out about my little escapade from somebody else first, I went in and told him myself that same day. Forced to take some action, now that the story was out in the open, he slapped me on the wrist for my poor judgment by downgrading me to copilot for a couple of months to help me remember the importance of careful flight planning and refraining from unauthorized sightseeing trips.

Where the Helos and Antelopes Play

One of the pilots in our squadron bought himself some grief with the following incident. He was tasked to take two missile-maintenance troops around for inspections of several remote sites. The flight, which involved numerous short hops from one site to another with approximately half-hour stops enroute while the technicians did their thing at each silo, was planned to last all day. After only two hours, however, the pilot returned prematurely to bring one of the maintenance men back to the hospital. The cause for his sudden inability to carry on was diagnosed as severe air sickness, and it turned out to be the result of the chopper's violent maneuvers while the pilot was chasing antelope between missile sites.

Problems With a "Feather-brained" AC

A good friend of mine who flys B-52s told me this hair-raising story. He was an instructor copilot at the time it happened, which meant that he was a way-above-average right-seater. During an inspection, he was matched with a somewhat weak AC whose duties normally involved flying a desk at the command post. This staff pilot was well known in the squadron for pulling airborne boners, and with black hatters looking over everybody's shoulders, the pressure was really on the copilot to keep the AC straight. Everything went according to the book until they leveled the "Buf" at 31,000 feet and the number six fire-warning light came on. Before the copilot could do anything, his squirrelly AC grabbed a handful of throttles and started pulling them back. By the time the dumbfounded right-seater stopped the pilot, numbers six, seven, five and four were already shut down. After regrouping and restarting the three incorrectly caged engines, they returned to their home base, where maintenance found a malfunction in the number six fire-warning system. Ironically, the copilot was severely chastized for not being quicker on the trigger and stopping the AC before he had shut down so many engines incorrectly.

DEJAVU

Lajes AB, Azores
(elevation 180 feet)

Caution—Bird hazard area, approach end of runway 16. Taken from the Enroute Supplement aerodrome remarks for Lajes AB, this is only one of the hazards associated with this spot in the central Atlantic. Located on the northeast corner of the rugged island of Terceira in the Azorian archipelago, Lajes' main runway runs northwest-southeast and is 10,912 feet long and 300 feet wide. The approach end of runway 16 is close to a 260-foot-high cliff that plunges almost straight down into the ocean.

Terrain rises abruptly on both sides of the runway, exceeding 1,000 feet as near as two and one-half miles southwest. On the ridge one-quarter mile east of the runway, a tower rises to about 500 feet MSL. The highest point on the island is a 177-foot tall tower perched on high terrain 12 miles west and topping out at 3,520 feet above sea level.

The winds at Lajes are notorious for being strong and gusty, and may necessitate large heading changes on final approach. Runway 16 has both ILS and PAR approaches. Runway 34 also has a PAR, and both runways are serviced by a circling VOR approach. All circling is done to the east, but because of the ridge line, the runway may not be visible during portions of the downwind leg.

Considering the terrain, high winds and birds you may have to contend with, always set up for a "cautious" approach into Lajes.

Final to runway 16. Cliffs at left and shoreline are home for many sea birds. Note rising terrain on both sides of runway.

Final approach to runway 34. Town of Praia is in foreground with a 400-foot-high bluff to the right. Airfield complex is to the right of runway.

Looking west across runway toward rapidly rising terrain. All circling is done east of the field.

C.R.'s plans for a lucrative training mission end up getting the bird.

C.R. TERROR

Hey, I've got a great idea for getting away from these desks and out into the wild blue yonder for a couple of days," boasted the temporary terrorizer of the Wing's Training Section.

"I'll probably regret that I asked, but what the heck," commented one of C.R.'s beleagured paper pushers. "How *do* we go about making a break when flying time is scarce as hen's teeth and we're right in the middle of our annual training records review cycle?"

Rising to stentorian tones as he ascended to the challenge of making his point, the Overweight Orator launched into an explanation of his plan. "It's so simple you will hardly believe it, lads," he began.

"Try us!" came a chorus of replies indicating that the whole office staff was now interested in what their officious OIC had to say.

"Well, what we do is appeal to the old man's twin desires to fill training squares and conserve flying time. At this very moment, several flyable brown-and-green machines are languishing idly on the ramp. If we gather all the office weenies who are in need of currency items into one massive gaggle, we should be able to work up a super weekend training itinerary and comandeer one of those spare birds to fly it in."

"You have quite a plan, but Colonel Fang will never buy off on it; it's too logical," challenged one of the more sarcastic members of C.R.'s merry band.

"That, my fine-feathered skeptic, is precisely why the colonel *will* buy off on the idea. Just wait and see," insisted the Flatulent Finnagler as he headed out the door to present his brainchild to the commander.

"Well???" echoed the office staff in unison when C.R. reen-

tered the room a few minutes later with a mixture of satisfaction and apprehension vying for prominence on his countenance.

"I've got good news and bad news," began the Silver Tongued Skipper. "The good news is that the old man liked my idea and gave me the go ahead. The bad news is that if anything goes wrong and we don't get our squares filled, or if we get stuck out someplace, he's holding me personally responsible."

"Those both sound like good news to me," chided Long Suffering Sam, whom the Reluctant Trainer had shanghaied into helping him—on a "volunteer" basis, of course.

Flushed with the headiness of success at selling his plan to the irascible Colonel Fang, but beginning to feel as if he had perhaps chomped off a larger chunk than he originally intended—now that the full responsibility for the mission's success was on his porky shoulders—the Ambivalent Aeronaut could only shake his head and roll his eyes upward. But his bewilderment was short-lived. He puffed himself up to his full five-feet-six inches and proclaimed, "The hardest part of this gambit was convincing the boss, but from here on it's gonna be a weekend of aerial fun and games."

Cruising along at 25-grand above the Great Salt Lake area as they headed westward, C.R. couldn't help reminiscing about the good old days when he was stationed at Hill AFB back in the 1960s. "See that little abandoned-looking airfield over there?" he asked, banking left

with the autopilot so the rest of the crew could observe the ground below through the side windows. "That's Wendover, Utah, where they flew some of the dry runs before the first A-bombs were dropped. We used to do a lot of airdrop practice there in our C-124s after flying low level routes all around the Great Salt Lake valley. Tactical missions were really fun in those days, m'lads. You can't imagine the thrill of a three-ship, low-level formation of Old Shakeys . . . ."

"Sorry to break into your reverie, boss," interrupted Long Suffering Sam, who had drawn copilot duties for the first leg of the day, "somebody from Twenty-second Air Force Command Post wants to speak to the AC."

"Twenty-second Air Force?" puzzled the Paunchus Pilot, who had failed to note the fact that he crossed over into the west coast numbered air force's territorial domain about two hours back. Still shaking his head quizzically, the Rotund One fingered the mike button and said, "Major Terror here, what might I do for you?"

A sonorous voice identifying itself as Major Schiff answered, and getting right to the point, announced, "We're diverting your airplane for a special mission."

"Wait a minute! What's going on here? You can't divert us—we're a bona fide training flight and we've got a horde of crewmembers on board with beaucoups of squares to fill," protested the Surprised Skipper.

"Understand the problem, Major, but we have some high priority cargo at Hill AFB that needs to be picked up and delivered to the Air Force Academy ASAP," explained the duty officer insistently.

"What happened, did the Blue Zoo run out of toilet paper again?" queried the Tricky Trash Hauler sardonically.

"As a matter of fact, no they didn't," came the reply with studied coolness. "Your mission—and you will choose to accept it Major Terror—involves transporting a falcon to the Academy."

"But I thought those turkeys already had a falcon," quipped the Bilbulous Buffoon.

"They do, but the full-time mascot came down with some

sort of avian ailment last night and they need a stand-in for this weekend's big home game with Navy."

Beginning to see the handwriting on the greaseboard with regard to the unexpected and unwanted diversion, C.R. asked, "When is this replacement raptor supposed to be ready for redeployment?"

"If you hook a 180 about now," replied the command post duty officer, "you should arrive at Hill about the same time as your special passenger. The man who raises and trains these birds for hunting and other purposes lives up near Brigham City, and he's already on his way."

"I took the liberty of raising Salt Lake Center and getting us a clearance back to Hill while you were talking to the command post," offered C.R.'s capable copilot. "We can turn around any time you're ready."

"Sammy, the world's oldest active duty major on flying status knows when he's been had," confessed the Aged Aviator. "To the rear, harch."

The closer they got to their destination, the more irate the Ace of Aerospace became at being diverted from his well-planned training mission. His apprehension was considerably increased by the vision of Colonel Fang bisecting his buns for wasting an aircraft and a weekend. By the time they reached the initial approach fix for an ILS/DME approach to runway 14, the angry Aeronaut was in a veritable fit of pique over the turn of events. And he was letting everybody on the crew know it as he rambled on about the inequities of the system in general and numbered air forces in particular.

"Boss, if you don't mind me reminding you, we're still at 10,000 feet and you haven't even briefed the approach yet," warned C.R.'s wary copilot as diplomatically as he could.

"Never fear, Sammy, m'lad, Hill Field is almost a mile high and I know the lay of this land like the back of my hand. There's no need to worry about an approach when you're as much of an alumnus of an aerodrome as I am of this landing patch, nosiree."

"How about at least briefing some missed approach procedures, boss?" persisted his long suffering sidekick.

Steepening his descent in an effort to get down to an altitude where he had a fighting chance of intercepting the glide slope, the Usurper of the Unitas looked sternly at his right-seater and boasted, "There's only one thing that would make me go around, Samuel!"

"What's that?" asked the copilot when he saw that C.R. wasn't going to tell him unless he played the "straight man" and popped the appropriate question.

"Getting to decision height and finding out somebody had stolen the runway," the Flying Funster proclaimed with a loud guffaw.

He's probably right, mused the worried warrior to himself as C.R. clicked off the checklist responses, the captain called out and jockied the quadraprop toward the localizer course. After all, Sam reconciled himself, I've only seen an AC go missed approach one time for real in all the hours I've been flying.

Looking up from a last minute check of the gages and the radar altimeter when they were less than a mile out, the copilot couldn't believe his eyes. A scant quarter of the way down the landing strip, a light plane which had been holding for a short-field takeoff was edging onto the runway. "Missed approach! Take it around!" called Sammy.

The Winged Woodenhead, who was intensely focused on the touchdown zone, never noticed the intruder further down the runway. With his concentration on the expected landing broken by the copilot's sudden warning, the Single Minded Skipper was momentarily reduced to confusion and inaction. Seeing that his Feckless Leader was temporarily inoperative, Sam seized the moment, cobbed in go-around power and honked the yoke back just in time to pull out with only inches to spare above the runway encroacher's vertical stabilizer.

"Nice work on that missed approach, Sammy," offered the Master of Mendacity once things had settled back to normal and they were established on downwind for another landing. Then, as if he had actually planned everything that happened just to test his sidekick's emergency reactions to a prostrate left-seater, the Fraudulent Flyboy followed his praise with patronizingly administered warning, "One thing though, m'lad, you must remember to say 'my airplane' whenever you elect to take control like that."

"You bet, boss," answered the slightly scolded copilot with a sigh of resignation.

QUICK STOPPERS

Engineer Saves Aircraft

The E-3A Sentry was on a transition training mission in the local radar pattern on an IFR flight plan. Flying from the left seat, the IP was keeping the big Boeing at 3,000 feet and on a heading of 350° for radar downwind while the copilot and an additional pilot exchanged seats to his right. With the new copilot still trying to get things squared away in the right seat, the flight engineer spotted an orange and white Cessna 172 at their one o'clock position, at the same altitude, and on a converging track and alerted the IP. The instructor maneuvered the AWACS bird out of the way just in time to avoid a midair collision.

For his decisive and timely actions, TSgt Lew A. Rice, 966 AWACS, Tinker AFB, Oklahoma, was recognized as a TAC Aircrewman of Distinction. His actions prove how important a total-crew effort is to safe mission accomplishment.

—adapted from *TAC Attack*

Say Again, S'il Vous Plait

With the uproar in Quebec about using French as well as English in air traffic control communications, it was revealed that at least one French-speaking pilot has for years flown into Montreal's Dorval Airport without understanding a word of English. The pilot told a [Canadian] federal commission of inquiry into the bilingual issue that he had no idea what Montreal controllers were telling him during all those approaches and landings. He would simply answer, "Roger," whenever they gave him directions, then find the active runway for himself. Once again proving that truth is stranger—and often scarier—than fiction.

—NPA Pilot

Unexpected Invitation

When the two C-130 crews were cleared to taxi their Herks to the runup area at a small civilian airfield as part of an exercise deployment, they didn't know they'd been invited to a wing ding. Both aircraft approached the pre-takeoff position from different routes. Taft 90, a C-130E, entered the area after back-taxiing down the runway. Meanwhile, a C-130B, Flat 09, motored to the runup pad via a taxiway, arriving a few seconds after the E-model. The circle of concrete was just barely large enough for the two Hercules to squeeze into, and Flat 09's AC parked his C-130B just aft and to the right of Taft 90. Both tactical airlifters did their runup checklists and awaited their respective departure releases.

In true Murphyesque fashion, the clearance for Flat 09, the farthest C-130 from the runway, came through first. Tower broadcast, "Flat 09, taxi into position and hold."

"Zero-nine position and hold," came the reply from the tactical airlifter.

Seeing a possible conflict, the pilot on the first Herk advised the tower, "Taft 90 is the first C-130."

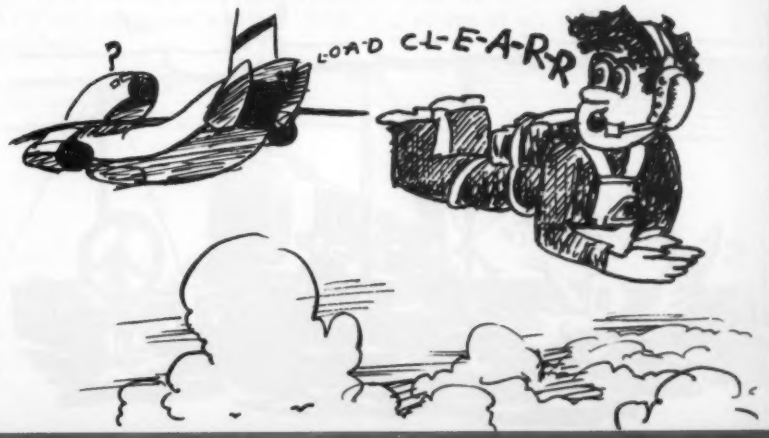
Realizing the clearance problem, the controller asked the B-model's crew if they had room to get around the other Herk. They replied, "It looks like it," so the tower recleared them onto the runway to hold.

As the brown-and-green airlifter eased forward, the crew was concerned about clearance from several elevated advisory signs and taxiway lights to their right, and the other C-130 to their left. The two pilots were checking their maneuvering room to the right when the aircraft's left wing scraped under the right wing of Taft 90. Neither crew felt the two Hercules collide, but the copilot in the E-model witnessed the contact. Taft 90 advised Flat 09 of the crunch and both C-130s were shut down and inspected. Fortunately, the damage to both aircraft was superficial and they continued their missions. In this case, disaster was averted by fortuitous circumstances. The moral is clear: if it looks too close to taxi, don't.

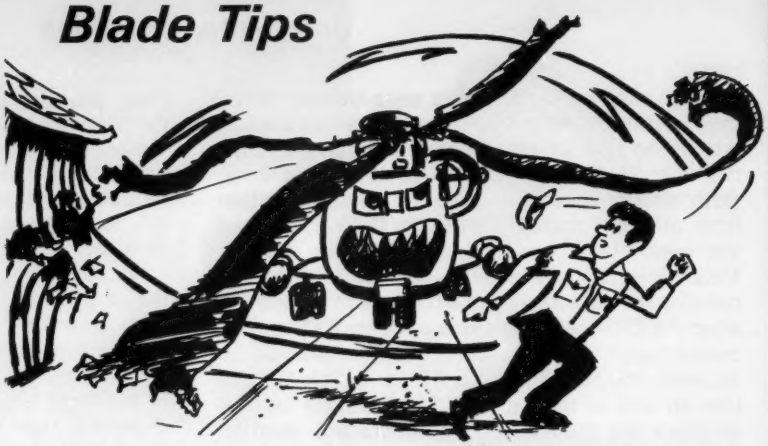
Jettisoned Load

Mr (or Ms) Loadmaster, do you really carefully preflight your parachute or restraint harness before flying an airdrop mission? We know of one LM who's glad his life support equipment worked as advertised.

Army jumpers had just exited the C-141A's ramp at 12,500 feet MSL as part of a High Altitude Low Opening (HALO) drop mission. During post-drop duties the loadmaster was walking aft in the cargo compartment, passing the ramp-hinge area, just as the Starlifter accelerated and encountered turbulence. The combined effects of his motion and that of the aircraft ejected him from the plane. Assuming the free-fall position, he spotted the paratroopers who had also just departed his aircraft. Keeping an eye on them, he pulled his ripcord when they pulled theirs. The loadmaster's backpack parachute deployed perfectly and he landed on the drop zone without injury.



Blade Tips



Because of its size and somewhat restricted visibility, the H-53 helicopter is vulnerable to taxi mishaps, particularly when taxiing close to obstacles. The two incidents reported here happened in a sister service, but have good lessons for all pilots.

The H-53's left-seater was taxiing at a civilian airport when he noticed the clearance between an aluminum hanger to the right and some trees to the left looked a little close for the helicopter's 72-foot plus rotor diameter, so he checked with the crew chief and copilot, who was riding the right seat for training. They agreed that it looked like the blades would clear the hangar, and the flight mech said they could squeeze by the trees on the other side. No wingwalkers were used.

With disheartening precision, the blade tips slashed a monumental hole in the aluminum-sheet wall of the building. Cost of damage to all parties was nearly $28,000.

In a second incident, ground control cautioned the Super Jolly crew about taxiing in close proximity to other aircraft on the crowded ramp. Two experienced men were assigned as wingwalkers. The pilot stopped the 53 prior to passing between a UH-1 to the left and a CH-53 parked to the right with its tail toward the moving chopper. After getting a "thumbs up" from the wingwalkers, and a "cleared left and right" from the crew chief and flight mech, the AC resumed taxiing. As the helo moved forward, its main rotor blades struck a tail rotor blade of the parked CH-53, because the clearance was about 10 inches too narrow. Total damage to the two helicopters was $82,600. Unfortunately, the crew was put into a box from which they failed to free themselves. Hindsight being 20/20, it appears that the only safe option would have been not to taxi.

Despite some mitigating circumstances in both cases, the aircraft commander was still responsible for the safe operation of the aircraft on the ground and in the air.

Historical Note

Calbraith P. Rodgers carved his niche in aviation history on 3 April 1912. On that date, Cal was flying his Model EX Wright Pusher at low altitude along the coast of California. He hit a seagull and his aircraft dove into the Pacific. Mr. Rodgers was pinned under the wreckage and drowned, thus becoming the first aviator to succumb to a bird strike.

—ATC *Approach to Safety*

AFTER DEADLINES

NORTON C-141 CREW RECENTLY LOGGED 102.8 HOURS on just four shuttles in support of the resupply mission to Diego Garcia in the Indian Ocean. The crew from the 14th Military Airlift Squadron, commanded by Captain Stu Young, carried fresh produce and daily mail to the British-controlled atoll where U.S. Navy and Air Force support people are stationed. The Diego Garcia mission has since been taken over by the 60th Military Airlift Wing at Travis AFB.

UNDERGRADUATE FLYING TRAINING SELECTION BOARD will meet 14 through 17 October 1980 at AFMPC to select active duty officers to enter flying training. Deadline for forwarding the completed AF Form 215 is 15 September 1980. Approximate quotas are 25 from navigator to pilot, 150 from nonrated to pilot and 15 from nonrated to navigator. Interested officers can contact their local CBPO for further details.

C-5 WING MOD CONTRACT was recently awarded to Lockheed-Georgia Co. by the Air Force. The $68-million contract will allow retrofit of all MAC's giant airlifters with new wings by July 1987. The first C-5s to receive the repalacement pinions are scheduled to enter the plant in February 1982. After June 1983, one and a half aircraft will be completed per month. The new wing, with an expected service life of 30,000 flight hours will be made of an aluminum alloy specially heat treated for high fatigue and corrosion resistance.

NEW TAIL FINS ON C-130s can save more than three percent on fuel according to recent tests. Called "after-body strakes," the 20-inch long aluminum and fiberglass fins are installed on a test C-130E underneath the aft fuselage. They reduce the aerodynamic drag by smoothing out the air flow. Tests will continue at Pope AFB in a series of air drop and cargo loading activities.

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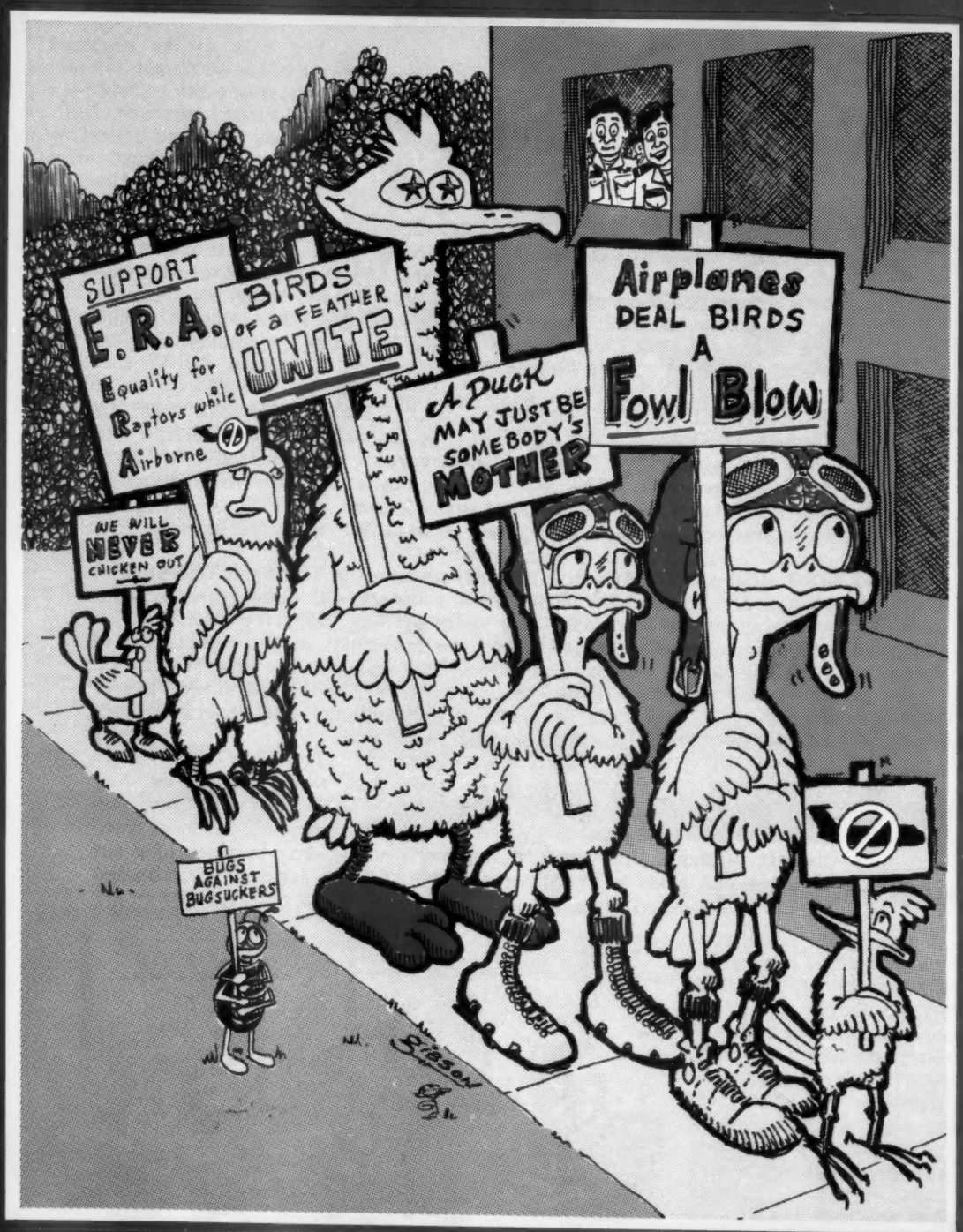
SUPPORT
E.R.A.
Equality for Raptors while Airborne
BIRDS OF A FEATHER UNITE
A DUCK MAY JUST BE SOMEBODY'S MOTHER
Airplanes DEAL BIRDS A Fowl Blow
WE WILL NEVER CHICKEN OUT
BUGS AGAINST BUGSUCKERS

Yessir, General, our bird strike problem has definitely assumed new proportions.